

**UNSCHEDULED CLOSURE PLAN**

**Basis for Closure Cost Estimate**

**US ECOLOGY NEVADA**

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**SECTION 16**  
**UNSCHEDULED CLOSURE PLAN**

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Closure Cost Estimate



## UNSCHEDULED CLOSURE PLAN

This Unscheduled Closure Plan was prepared by US Ecology Nevada to comply with the requirements of 40 CFR 264.142 (a), as adopted by the Nevada Division of Environmental Protection (NvDEP). This plan describes the activities included in developing the cost estimate for final closure of existing units. In each case, a worst-case closure scenario has been used to develop a conservative cost estimate, and assumes that US Ecology is no longer in control of the facility and that closure must be performed by an outside contractor.

The procedures described in this plan were used to calculate the worst-case closure cost estimates for the following existing units:

- Hazardous Waste Land Disposal Trench 11 and Trench 12
- Polychlorinated Biphenyl (PCB) Building
- Batch Stabilization Units
- Truck Parking Storage Area
- Evaporation Pad
- Dry Hazardous Waste Storage Areas 1 and 2
- Container Management Building

### 16.1.0 CLOSURE PERFORMANCE STANDARD

Closure minimizes the need for further maintenance and the potential for post-closure escape of hazardous waste or constituents to the surrounding environment.

### 16.2.0 MAXIMUM WASTE INVENTORY

The maximum potential inventory of hazardous waste on site at the time of this unscheduled closure is identified in Table 1, and is estimated to be the sum of the design capacity for each treatment and storage unit included in this permit application.

For the purpose of developing the cost estimate, most of the facility hazardous waste inventory will be transported to an off-site treatment, storage or disposal facility permitted under RCRA (and/or Toxic Substance Control Act for PCB waste inventory). An outside contractor may elect to bring portable stabilization equipment to the facility to treat waste inventories at the facility prior to on-site disposal if airspace permits. For the worst-case estimate however, all waste that cannot be directly landfilled is assumed to be sent off site for treatment and disposal. The procedures assumed to be employed for



waste removal and final disposition of each unit's waste inventory in the worst-case scenario are further described in Section 16.5.0.

### **16.3.0 SCHEDULE FOR CLOSURE**

A closure schedule with the projected activities and required closure time is included in Table 2.

Closure activities will be completed within 90 days from receipt of the final volume of waste at the unit or facility.

### **16.4.0 AMENDMENTS TO UNSCHEDULED CLOSURE PLAN**

US Ecology will submit a written request to the NDEP for a modification of the approved Unscheduled Closure Plan whenever the following occurs:

- Changes in operating plans or facility design materially affect the Unscheduled Closure Plan,
- In conducting partial closure activities, unexpected events require a modification to the approved Unscheduled Closure Plan.

### **16.5.0 CLOSURE ACTIVITIES**

#### **16.5.1 Closure of Landfill**

Below-grade available space, except for the volume required for disposal of on-site waste and other items will be backfilled with soil from the site's soil stockpile. Any above-grade waste will be contained by constructed dikes and soil backfill, as necessary.

When waste and backfill within the above-grade disposal facility reach an elevation within approximately three feet below the designed top of waste elevation, final waste placement operations will begin. At that time, waste and backfill will be mounded toward the middle of the above-grade area to the design maximum waste elevations. When the final waste slopes have been established, the final cover will be installed. This cover will consist of a layered soil system.

Once the slopes for waste and backfill are established, a final cover system will be placed over the landfill. It is assumed that the contractor will install the approved cover system, and will follow the specified quality assurance and quality control procedures.

Control of percolation into the closed trench will be provided by constructing a cover that holds infiltrated water in the evaporative zone of the cover until it is returned to the atmosphere. The cover virtually eliminates percolation into the trench.



The final landfill covers for USEN Trenches 11 and 12 satisfy the regulatory requirements for final closure of a landfill cell and are fully consistent with the provisions of 40 CFR 264.110, the performance standards of 40 CFR 264.111, and the following requirements of 40 CFR 264.310(a) dealing with landfill closure:

- Provide long-term minimization of migration of liquids through the closed landfill;
- Function with minimum maintenance;
- Promote drainage and minimize erosion or abrasion of the cover; and
- Accommodate settling and subsidence so that cover's integrity is maintained.

#### **16.5.1.1 Evaporative Cover Characteristics**

The cover is appropriate for an arid region, and uses the moisture retention properties of native soils to contain and store infiltrating moisture (precipitation) until the natural processes of evaporation and plant transpiration remove the stored moisture and release it the atmosphere. The cover is protective of human health and the environment, and offers long-term benefits when compared to conventional landfill cover types that incorporate compacted clay or synthetic materials as low-permeability components. These benefits include, but are not limited to:

- use of easily obtained construction materials,
- relative simplicity of construction,
- reduced complexity of quality assurance/quality control programs, and
- increased long-term cover integrity and stability.

From bottom to top, the components of the arid region cover to be used for Trenches 11 and 12 are as follows.

- **Interim Cover Soil Layer.** The lower layer of the final cover is a lightly compacted native soil layer at least 12-inches (1.0 foot) thick and extending across the cover to the natural ground surface on all sides of the trenches.
- **Final Cover Soil Layer.** The upper layer of the final cover is a lightly compacted soil layer at least 24-inches (2.0 feet) thick and extending across the cover to the natural ground surface on all sides of the trenches. In conjunction with the Interim Cover Layer, it retards the downward movement of infiltrating water by



providing temporary water-storage, and allowing stored water to be returned to the atmosphere by evaporation and plant transpiration.

Mathematical models predicted that a three-feet (36-inch) thick monolithic cover will prevent significant percolation of fluids through the cover and into waste. The results also indicate that nearly all of the precipitation that enters returns to the atmosphere through the combination of evaporation and transpiration rather than infiltrating deeply into the cover and percolating into waste. These results likely are conservative because no vegetation was considered in the models, so the evaluation of "evapotranspiration" (the combined effect of evaporation and plant transpiration) actually was limited to consideration of evaporation only.

#### **16.5.1.2 Evaporative Cover Specifications**

Compacted-soil starter berms will serve as the outer shell of the above-grade waste disposal area for Trenches 11 and 12. The starter berms on the perimeter of Trench 11 were constructed previously in accordance with NDEP approval of the 1999 design and plan for above-grade waste disposal. The Trench 12 berms will be constructed of compacted native soil or compacted select soil waste (where the berm is over waste). Suitable materials will be placed in lifts not exceeding 12 inches thick and compacted to 95 percent maximum dry density (ASTM D 1557). In-situ density tests will be performed as specified in the CQA Plan.

Soil materials for final cover construction will consist of natural soil obtained from USEN stockpiles and the Trench 12 excavation, supplemented as needed with imported soil materials. Native and imported materials will be screened and mixed, as needed, to obtain material of satisfactory grain size.

The Trench 11 interim soil layer has been constructed as a layer at least 12 inches thick constructed during the trench's waste disposal operations history. The Trench 12 interim soil layer will be a layer not less than 12 inches thick that is comprised of natural soil materials that contain no grain sizes larger than 6.0 inches. Lift thickness will be measured and documented, but there is no compaction specification for this material, which will be placed as above-grade waste disposal proceeds.

Soil materials for the Trench 11 and 12 final cover layer will be 90 percent smaller than 1.0 inch with not less than 5.0 percent passing the #200 sieve. No materials in this layer will be larger than 3.0 inches. Cover materials will be placed in lifts that between 12 and



24 inches thick and lightly compacted to achieve a density of about 80 percent MDD (ASTM D 1557).

The lower density compaction requirement of the soil cover is important for the moisture holding capacity of the soil. Over-compaction could lead to reduced effectiveness and should be prevented. Areas of the final cover layer that become overly compacted, such as could result from repeated vehicle or equipment passage, will be loosened by shallow ripping or disking.

#### **16.5.1.3 Post Closure Performance Verification**

Verification of post-closure performance of the final cover will be provided by the combination of leachate monitoring (quality and quantity), basin lysimeter monitoring and groundwater monitoring.

Leachate monitoring will use existing Trench 11 and Trench 12 sumps to remove leachate from the landfill units. Records of leachate removal will be tabulated and evaluated to determine whether leachate production rates decline following facility closure.

Basin Lysimeters will be constructed underneath the evaporative cover to verify that infiltration of moisture does not reach beneath the landfill cover.

Closure of the above-grade disposal facility will be considered complete when the final design slopes have been established on the cover. Post-closure inspection and maintenance will be performed in the same manner as for other closed landfill units at the facility. With the design features presented in this report, it is expected that the above-grade disposal facility will provide long-term, maintenance-free protection to the environment.

Construction of the final cover will be conducted in accordance with cell specifications included in the Landfill Report of the Permit Renewal Application. A detailed evaluation of the proposed final cover performance is presented in the following reports, which have been previously presented to the NDEP, and are included herein by reference.

- The design of the proposed final cover is described in detail in the *Trench 11 Above-Grade Disposal Facility Design and Construction Quality Assurance Plan*, revised May 6, 1999, by AquAeTer, Inc.



- *Erosion Calculations for Above Grade Disposal Cell*, dated July 28, 1987, prepared by Dr. James L. Grant and Associates.
- *Cell 10 Cap Design Analysis Using Wind Erosion Equation* prepared by US Ecology in March 1991.
- *Supplement – Landfill Report for Trench 12, October 2007*, AquAeTer, Inc.
- *Design Basis and Construction Specifications for Trenches 11 and 12 Final Covers, April 2008*, AquAeTer, Inc.

The soil cover data in the above referenced reports is applicable to the cover design for Trenches 11 and 12.

#### **16.5.2 Closure of Treatment and Storage Units**

For purposes of the closure activity discussion, treatment and storage units are grouped according to their location, as follows:

- PCB Processing Building
- Truck Parking Storage Area
- Batch Stabilization Units
- Evaporation Pad
- Dry Hazardous Waste Storage Areas 1 and 2
- Container Management Building

##### **16.5.2.1 PCB Processing Building (CMU #1)**

All liquid PCBs in storage at the time of an unscheduled closure will be transported to a TSCA authorized disposal facility. PCB solid materials will be removed and disposed of in the on-site landfill cell. All RCRA waste inventory in storage will be removed and transported to a RCRA authorized off-site facility for treatment and/or disposal.

The steel building shell will be dismantled and disposed of in the landfill cell. Removal of the building's concrete floor and underlying liner system will proceed as follows:



- Wash the concrete floor of the building and break into manageable pieces using appropriate equipment.
- Remove the building's concrete floor and dispose in landfill cell.
- Remove the containment system drainage material and transfer to the on-site disposal unit.
- Remove, cut and fold the underlying liner system for disposal in the on-site landfill cell.
- Obtain four samples from the soil underlying the containment system to demonstrate clean closure. Select sample locations in areas with the highest probability for contamination (i.e., areas where visual inspection of the liner indicates possible deterioration). If no deterioration is evident, simple random location selection should be performed.
- Analyze samples for the parameters specified in Table 3 following U.S. Environmental Protection Agency (EPA) SW-846 methods, and compare the results statistically to background concentrations. Samples where background concentrations are obtained within a statistically acceptable margin should be considered to have met the clean closure performance standard. Because of the presence of a liner system, no soil contamination is anticipated; therefore no soil removal is planned.

#### 16.5.2.2

##### **Truck Parking Storage Area (CMU #7)**

- Transport waste inventory in the Truck Parking Storage Area to a RCRA-authorized hazardous waste management facility.
- Wash the unit's concrete slab prior to on-site disposal.
- Obtain four samples from the soil underlying the containment system to demonstrate clean closure. Select sample locations in areas with the highest probability for contamination (i.e., any areas where the concrete surface has been stained by waste materials, along cracks or spalled



concrete surfaces). If no deterioration is evident, simple random location selection should be performed.

- Analyze samples for the parameters specified in Table 3 following EPA SW-846 methods, and compare the results statistically to background concentrations.
- Remove three inches of soil and dispose of in the on-site landfill.

**16.5.2.3      Batch Stabilization Units (T1, 2, 3, 18, &19)**

- Remove the waste inventory in the stabilization units to an authorized off-site facility for treatment and disposal.
- Wash and dismantle the stabilization vessels, and dispose of in landfill cell.
- Remove the concrete silo foundation and send off site for treatment and disposal.
- Follow the procedures described in Section 5.2.1 for removal of the containment system, removal of any contaminated soil, and for demonstration of clean closure.

**16.5.2.4      Evaporation Pad (T-11)**

The Evaporation Pad will be the last unit to undergo closure, because the unit will be used to decontaminate any small equipment (e.g., shovels, hand tools, etc.) remaining after completion of closure of other units.

- Remove the liquid waste inventory in the unit for off-site disposal at an authorized facility.
- Remove the concrete pad and send off-site for treatment and disposal.
- Follow the activities described in Section 5.2.1 for removal of the liner system and for demonstration of clean closure.



**16.5.2.5**

**Dry Hazardous Waste Storage Areas 1 and 2 (CMU #5 and #6)**

Waste inventory in the Dry Hazardous Waste Storage Area will be treated and disposed of on site, or transported to a RCRA-authorized hazardous waste management facility. The pad area will be excavated and removed to the disposal cell.

Obtain four samples from the soil underlying the storage pad to demonstrate clean closure. Select sample locations in areas with the highest probability for contamination (i.e., any areas where the pad surface has been stained by waste materials). If no deterioration is evident, simple random location selection should be performed.

Analyze samples for the parameters specified in Table 3 following EPA SW-846 methods, and compare the results statistically to background concentrations.

Remove three inches of soil and dispose of in the on-site landfill.

**16.5.2.6**

**Container Management Building (CMU #16)**

Waste inventory in the Container Management Building will be treated and disposed of on site, or transported to a RCRA-authorized hazardous waste management facility.

The steel building shell will be dismantled and disposed of in the landfill cell. Removal of the building's concrete floor and underlying liner system will proceed as follows:

- Wash the concrete floor of the building and break into manageable pieces using appropriate equipment.
- Remove the building's concrete floor and dispose in landfill cell.



- Obtain four samples from the soil underlying the containment system to demonstrate clean closure. Select sample locations in areas with the highest probability for contamination (i.e., areas where visual inspection of the floor indicates possible deterioration). If no deterioration is evident, simple random location selection should be performed.
- Analyze samples for the parameters specified in Table 3 following U.S. Environmental Protection Agency (EPA) SW-846 methods, and compare the results statistically to background concentrations. Samples where background concentrations are obtained within a statistically acceptable margin should be considered to have met the clean closure performance standard.

#### **16.6.0 CLEANING AND DECONTAMINATION OF EQUIPMENT AND STRUCTURES**

In developing the cost estimate for decontaminating any equipment or structures at the facility, the following was assumed:

- High pressure/steam clean all accessible surfaces of piping, valves, pumps and other ancillary equipment associated with tank systems.
- Drain all wash waters for subsequent removal. Pressure wash accessible tank surfaces.
- Collect wash waters from the bottom of the tank and remove for off-site disposal.
- Pressure wash the concrete floors and structures.
- Visually inspect the entire surface to ensure removal of visually detectable residues.
- Remove wash waters generated during decontamination for off-site disposal.
- Clean heavy equipment used for handling waste with a high pressure steam cleaner until all visible contamination has been removed.
- For unit decontamination, cleaning may be supplemented with detergents and/or solvents, as necessary. Perform a final rinse with clean tap water following decontamination and visual inspection of all structures/equipment.



- Collect and submit one rinsate sample from each unit/structure for analysis to verify decontamination. Conduct sampling and analysis following procedures recommended by the current version of EPA SW-846 at the time of closure. Analyze decontamination verification samples for the parameters identified in Table 3.

NOTE: Decontamination verification is only required for clean closure of a structure/equipment. If decontamination is intended to comply with the Land Disposal Restricted (LDR) treatment standards for debris, no verification will be performed.

#### **16.7.0 GROUNDWATER MONITORING**

For purposes of developing the cost estimate it has been assumed that one groundwater monitoring event will take place during the closure period, and be conducted following permitted procedures in place just prior to closure.

#### **16.8.0 LEACHATE COLLECTION**

Completion of the activities should take no longer than a three-month period. Estimates for disposal of the leachate generated during the closure period are based on off-site disposal.

#### **16.9.0 RUN-ON AND RUN-OFF CONTROLS**

The existing perimeter ditches around the facility will continue to provide run-on protection during the closure period. Run-off control mechanisms in place during the active life will remain in place throughout the closure period. Rainfall coming in contact with waste in the active cell will be collected in the cell and treated as leachate. Rainfall contacting capped portions of the cell is considered clean and allowed to run off into natural drainage courses.

#### **16.10.0 CLOSURE COST ESTIMATE**

The cost estimate for the unscheduled closure of the facility is included in Appendix A. This cost estimate considers a worst-case scenario, and is based on the assumption of unexpected closure prompted by company bankruptcy at a point in the facility's operating life when the extent and means of operation would make closure most expensive. The worst-case closure scenario considers that US Ecology is no longer in control of the facility and that closure must be performed by an outside contractor. The cost estimate and cost assumptions are detailed in Appendix A.

In accordance with the requirements of 40 CFR 264.142(c), the closure cost estimate will be modified within 30 days after a revision to the Closure Plan has been authorized which increases



the closure cost. The total closure cost estimate will be updated for inflation annually, according to the guidelines in 40 CFR 264.142(b).

**TABLE 16-1**  
**ESTIMATE OF MAXIMUM WASTE INVENTORY**

UNIT DESCRIPTION	AMOUNT	UNITS	WASTE TYPE
Leachate Tank (T-15)	20,000	gallons	Landfill Leachate (F039)
PCB Tanks (T4 – T10)	25,000	gallons	PCB Liquids
Truck Parking Storage Area (CMU #7)	400	cubic yards	Stabilization Waste
PCB Building (CMU #1)	102,960	gallons	RCRA Waste and PCB Materials
Evaporation Pad (T-11)	10,000	gallons	Wastewater and Sludge
Batch Stabilization Units (T1, 2, 3, 18, & 19)	140	cubic yards	Stabilization Waste
Dry Hazardous Waste Storage Area (CMU #5 & CMU #6)	495 / 100,083	cubic yards / gallons	RCRA and non-RCRA Waste
Container Management Building (CMU #16)	2430 / 481,250	cubic yards / gallons	RCRA and non-RCRA Waste

**TABLE 16-2**  
**ESTIMATED SCHEDULE FOR CLOSURE AT US ECOLOGY NEVADA**

TASK	ESTIMATED TIME PERIOD
Contractor and Equipment Arrive at Facility	Day 0
Complete Treatment or Disposal of Waste Inventory	Day 90
Complete Closure of Landfill	Day 180 *
Complete Closure of Treatment & Storage Units (all units except the Evaporation Pad)	Day 178 *
Complete Equipment Decontamination and Evaporation Pad Closure	Day 180
Final Inspection and Certification of Compliance with Closure Plan by Registered Professional Engineer (P.E.)	Day 240

\* Closure of units, as considered in the cost estimate, will proceed simultaneously because an outside contractor will perform closure. The only unit that is addressed separately is the Evaporation Pad, which will be the last unit to be dismantled to allow the third party performing closure to use it for equipment decontamination.



**TABLE 16-3**

**CLEAN CLOSURE DEMONSTRATION PARAMETERS**

<b>UNIT</b>	<b>PARAMETERS</b>
PCB Processing Building (CMU #1)	PCBs, VOCs and Eight RCRA Metals
Batch Stabilization Units (T1, 2, 3, 18, & 19)	PCBs, VOCs and Eight RCRA Metals
Evaporation Pad (T-11)	PCBs, VOCs and Eight RCRA Metals
Dry Hazardous Waste Storage Areas 1 and 2 (CMU #5 & CMU #6)	Eight RCRA Metals
Container Management Building (CMU #16)	PCBs, VOCs and Eight RCRA Metals



**APPENDIX 16-A**  
**CLOSURE COST ESTIMATE**



# 2009 Scheduled Closure Cost

ITEM NO.	ITEM	2008 Total	2009 Inflation Adjusted Rate	2009 Total
1A	Trench 11 - Scheduled (with alternate cap)	\$400,000	1.0203	\$408,120.00
1C	Trench 12 - Scheduled (with alternate cap)	\$130,000	1.0203	\$132,639.00
2	PCB Processing Building & RCRA Storage Area	\$334,195	1.0203	\$340,979.44
3	Truck Parking Storage Area	\$135,568	1.0203	\$138,320.31
4	Truck Wash and Evaporation Pad	\$39,472	1.0203	\$40,273.33
5	"Terminator" Stabilization unit - Closed		1.0203	\$0.00
6	Corrective Action	\$209,000	1.0203	\$213,242.70
7	Proposed Tank Farm - Never built		1.0203	\$0.00
8	Stabilization/Containment Building - Never Built		1.0203	\$0.00
9	Batch Stabilization Tanks	\$224,316	1.0203	\$228,869.19
10	RCRA Container Storage - Never Built		1.0203	\$0.00
11	Decontamination-Contractors large Equipment	\$8,291	1.0203	\$8,459.32
12	Personal Protective Equipment	\$7,498	1.0203	\$7,649.90
13	Groundwater Monitoring	\$64,160	1.0203	\$65,462.45
14	Closure Certification	\$16,150	1.0203	\$16,477.85
15	Waste Consolidation Area - Closed		1.0203	\$0.00
16	Low Temperature Thermal Desorption Unit	\$37,014	1.0203	\$37,765.12
17	Dry Hazardous Waste Storage Area	\$1,049,970	1.0203	\$1,071,284.42
18	Container Mangement Building	\$1,023,661	1.0203	\$1,044,441.63
	Management Oversight	\$294,344	1.0203	\$300,318.77
<b>TOTAL FACILITY CLOSURE COST ESTIMATE</b>		<b>\$3,973,639</b>		<b>\$4,054,303</b>

2009 Closure Cost



# 2008 Scheduled Closure Cost

ITEM NO.	ITEM	2008 Total
1A	Trench 11 - Scheduled	\$400,000
1B	Trench 11 - Unscheduled	\$0
1C	Trench 12 - Scheduled	\$130,000
1D	Trench 12 - Unscheduled	\$0
2	PCB Processing Building & RCRA Storage Area	\$334,195
3	Truck Parking Storage Area	\$135,568
4	Truck Wash and Evaporation Pad	\$39,472
6	Corrective Action	\$208,000
9	Batch Stabilization Tanks	\$224,316
11	Decontamination-Contractors large Equipment	\$8,291
12	Personal Protective Equipment	\$7,498
13	Groundwater Monitoring	\$64,160
14	Closure Certification	\$16,150
16	Low Temperature Thermal Desorption Unit	\$37,014
17	Dry Hazardous Waste Storage Area	\$1,049,970
18	Container Management Building	\$1,023,661
	Management Oversight	\$294,344
<b>TOTAL FACILITY CLOSURE COST ESTIMATE</b>		<b>\$3,973,639</b>



**BEATTY FACILITY DETAILED COST ESTIMATE  
SCHEDULED CLOSURE, WITH ABOVE GRADE WASTE**

ITEM NO.	ITEM	UNIT	2008 Unit Cost	UNIT COST REF	QUANTITY	COST TOTAL
<b>4 - Trench 11 Scheduled Closure</b>						
<b>COVER</b>						
1	Backfill - Intermediate Cap Layer (1 ft thick)	CY	\$ 4.63	19C and 19D	0	\$ -
	Backfill - Surficial Cap Layer (2 ft thick)	CY	\$ 4.63	19C and 19D	67,190	\$ 311,246
	Final Grading of Cover	MSF	23,265	67	907	\$ 21,097
	Partial Subtotal 1					\$ 332,342
	QA/QC for Cap	MSF	\$ 25	65	907	\$ 22,670
	Subtotal 1					\$ 355,012
<b>LEACHATE COLLECTION SYSTEM</b>						
2	Pipe for Riser Extension - West Phase	LF	\$ 91.77	21	0	\$ -
	Labor of Riser Extension - West Phase	Hr	\$ 65.00	40E	10	\$ 650
	Leachate Disposal	Gal	\$ 0.96	28	15,000	\$ 14,445
	Transportation	Load	\$ 1,800.00	32	3	\$ 5,400
	Labor (Monitor & Pump Sumps)	Hour	\$ 65.00	40E	36	\$ 2,340
	Leachate Analysis - Monthly - VOAs and PCBs	Anal.	\$ 240.00	36	3	\$ 720
	Leachate Analysis - Quarterly - Permit Parameters	Anal.	\$ 1,000.00	35B	1	\$ 1,000
	Subtotal 2					\$ 24,555
	Subtotal Cost of Landfill Closure					\$ 380,000
	Engineering and Design (5%)					\$ 19,000
	total Cost of Landfill Closure					\$ 400,000



**BEAUTY FACILITY DETAILED COST ESTIMATE  
SCHEDULED CLOSURE, WITH ABOVE GRADE WASTE OF TRENCH 12**

ITEM NO.	ITEM	UNIT	2008 Unit Cost	UNIT COST REF	QUANTITY	COST TOTAL
<b>IC- Trench 12 Scheduled Closure</b>						
<b>COVER</b>						
1	Backfill - Surficial Cap Layer (2 ft thick)	CY	\$ 4.63	19C and 19D	21,925	\$ 101,564
	Final Grading of Cover	MSP	\$ 23.27	67	296	\$ 6,891
	Partial Subtotal 1					\$ 108,455
	QA/QC for Cap	MSP	\$ 25	65	296	\$ 7,405
	Subtotal 2					\$ 115,860
<b>LEACHATE COLLECTION SYSTEM</b>						
2	Leachate Disposal	Gal	\$ 0.96	28	5,000	\$ 4,815
	Transportation	Load	\$ 1,800.00	32	1	\$ 1,800
	Labor (Monitor & Pump Sumps)	Hour	\$ 65.00	40E	12	\$ 780
	Leachate Analysis - Monthly - VOAs and PCBs	Anal.	\$ 240.00	36	1	\$ 240
	Leachate Analysis - Quarterly - Permit Parameters	Anal.	\$ 1,000.00	35B	1	\$ 1,000
<b>Subtotal 2</b>						
<b>Subtotal Cost of Landfill Closure</b>						
<b>Engineering and Design (5%)</b>						
<b>Total Cost of Landfill Closure</b>						
						\$ 130,000



ITEM NO.	ITEM	UNIT	UNIT COST	UNIT COST REF	QUANTITY	COST TOTAL
<b>2 - PCB Processing Building &amp; RCRA Storage Area</b>						
<b>WASTE INVENTORY DISPOSAL COST</b>						
1	Liquid PCB Waste (1,310 drums)	Lb	\$ 0.26	29	605,220	\$157,357
	Transport Liquid PCB Waste Office	Load	\$ 5,705.05	31	15	\$85,576
	Solid PCB Waste (562 drums) - Dispose In Cell	CY	-	n/a	153	\$0
	Labor - Hand load liquid PCB waste	CY	\$ 44.98	3	356	\$16,013
	Load and haul solid PCB drums to cell	CY	\$ 20.17	4.5	153	\$3,087
<b>Subtotal 1</b>						
<b>PCB BUILDING - SHELL</b>						
2	Demolish	Day	\$ 4,634.08	26	2	\$9,268
	Load and transport to cell	CY	\$ 20.17	4.5	12.10	\$244
	<b>Subtotal 2</b>					<b>\$9,512</b>
<b>PCB BUILDING - SLAB</b>						
3	Demolish (slab 6" thick)	SF	\$ 7.29	6	4,653	\$33,919
	Dispose on site	CY	\$ 9.10	10	86.17	\$784
	Dispose of Rinsate	Lb	\$ 0.26	29	11,199	\$2,912
	Transportation	Load	\$ 5,705.05	31	1	\$5,705
	Labor & Equipment Rental	SF	\$ 0.87	2	4,653	\$4,041
<b>Subtotal 3</b>						
<b>PCB BUILDING - FOUNDATION SOILS</b>						
4	Excavate top 3 layers of foundation soil & load	CY	\$ 15.51	15A	277.80	\$4,309
	Haul to cell	CY	\$ 4.58	19	277.80	\$1,272
	Analytical (Foundation Soil, PCBs)	Each	\$ 90.00	47	4	\$360
<b>Subtotal 4</b>						
<b>PCB BUILDING - SYNTHETIC LINERS</b>						
5	Labor - Inspec secondary liner	Hour	\$ 110.00	40D	2	\$220
	Hand excavation to prepare liner for inspection	CY	\$ 97.20	14	92.60	\$9,000
	Load and haul to cell	CY	\$ 45.82	3.5	2.80	\$128
	<b>Subtotal 5</b>					<b>\$9,349</b>
<b>Total Cost of PCB Processing and RCRA Storage Area Closure</b>						<b>\$334,195</b>



ITEM NO.	ITEM	UNIT	UNIT COST	UNIT COST REF	QUANTITY	COST TOTAL
<b>TRUCK PARKING STORAGE AREA</b>						
<b>WASTE INVENTORY</b>						
1	Stabilization/Disposal of solid waste offsite	Ton	\$ 50.00		48	\$ 20,250
	Transportation	Load	\$ 2,400.00		33	\$ 48,000
	<b>Subtotal 1</b>				20	\$ 68,250
<b>CONCRETE SLAB</b>						
2	<b>Demolish</b>					
	Dispose on site	SF	\$ 7.29		6	\$ 7,448
	Dispose of Rhaste	CY	\$ 9.10		10	\$ 137.90
	Transportation	Gal	\$ 0.96		28	\$ 1,986.00
	Labor & Equipment Rental	Load	\$ 1,800.00		32	\$ 1,800
	<b>Subtotal 2</b>				2	\$ 7,448
<b>FOUNDATION SOILS</b>						
3	<b>Excavate foundation soil and load (3 inches)</b>					
	Haul to cell	CY	\$ 15.51		154	\$ 1,070
	Analytical (Foundation soil, metals)	CY	\$ 4.58		19	\$ 179
	<b>Subtotal 3</b>	Each	\$ 85.00		45	\$ 340
					4	\$ 1,588
<b>11 Truck Parking Area</b>						\$ 135,568



ITEM NO.	ITEM	UNIT	UNIT COST	UNIT COST REF	QUANTITY	COST TOTAL
<b>TRUCK WASH and EVAPORATION PAD</b>						
<b>WASTE INVENTORY</b>						
1	Dispose offsite	Gal	\$ 0.96	28	10,000	\$ 9,630
	Transportation	Mile	\$ 1,800.00	32	2	\$ 3,600
	Subtotal 1					\$
	<b>CONCRETE SLAB</b>					<b>13,230</b>
2	Demolish	SF	\$ 7.29	6	2,080	\$ 15,163
	Treatment/Disposal of Concrete	Ton	\$ 50.00	48	78	\$ 3,900
	Transportation	Mile	\$ 3.88	11	400	\$ 1,551
	Subtotal 2					\$ 20,614
3	<b>FOUNDATION SOILS</b>					
	Excavate foundation soil and load	CY	\$ 15.51	15A	38.50	\$ 597
	Haul to cell	CY	\$ 4.58	19	38.50	\$ 176
	Analytical (Foundation soil, metals)	Each	\$ 85.00	45	4	\$ 340
	Analytical (Foundation soil, PCBs)	Each	\$ 90.00	47	4	\$ 360
	Analytical (Foundation soil, TOC)	Each	\$ 45.00	46	4	\$ 180
	Subtotal 3					\$ 1,653
4	<b>SYNTHETIC LINERS</b>					
	Labor - Inspect secondary liner	Hr	\$ 110.00	40D	2.0	\$ 220
	Hand Excavation to prepare liner for inspection	CY	\$ 97.20	14	38.52	\$ 3,744
	Load and haul to cell	CY	\$ 45.82	3.5	0.24	\$ 11
	Subtotal 4					\$ 3,975
	<b>if Truck Wash and Evaporation Pad</b>					\$ 39,472



ITEM NO.	ITEM	UNIT	UNIT COST	UNIT COST REF	QUANTITY	COST TOTAL	
6- CORRECTIVE ACTION (Install/maintain SVE units for 18 months)							
6A	SOIL VAPOR EXTRACTION SYSTEM (SVE)						
	Well(s) Installation						
	Regulators	LF	\$ 150	68	200	\$ 30,000	
	Pressure Gauges	Each	\$ 92	N/A	6	\$ 549	
	Piping	Each	\$ 24	N/A	2	\$ 49	
	Pressure Relief Valves	LF	\$ 2.44	N/A	150	\$ 366	
	Valves	Each	\$ 31	N/A	2	\$ 61	
	Flow Meters	Each	\$ 31	N/A	3	\$ 92	
	Subtotal 6A	Each	\$ 207	N/A	2	\$ 415	
6B	EQUIPMENT						
	\$ 31,531						
	Blowers	Each	\$ 3,050	N/A	2	\$ 6,100	
	Filter housing	Each	\$ 732	N/A	2	\$ 1,464	
	Piping	Each	\$ 2.44	N/A	150	\$ 366	
	Vapor Phase GAC	Each	\$ 6,710	N/A	1	\$ 6,710	
6C	ELECTRICAL						
	\$ 14,640						
6C	Material	LS	\$ 2,440	N/A	1	\$ 2,440	
	Subtotal 6C						
6D	CONTRACTOR CONSULTING SERVICES						
	\$ 2,440						
	Pilot system design review (complete)	Hr		N/A		\$ -	
	Evaluation of pilot test results (complete)	Hr		N/A		\$ -	
	Operation system Design	Hr	\$ 112	N/A	120	\$ 13,469	
	Min.	LS	\$ 2,440	N/A	1	\$ 2,440	
6E	COMPANY LABOR SUPPORT						
	\$ 15,909						
	Project Management	Hr	\$ 49	N/A	550	\$ 26,840	
	Liaison / Permit Specialist - Well head changes/air permit	Hr	\$ 43	N/A	240	\$ 10,248	
	Site Labor - Well head modification for SVE blower	Hr	\$ 22	N/A	120	\$ 2,635	
	Site Labor - Well head modification for AS blower	Hr	\$ 22	N/A	80	\$ 1,757	
	Site Labor - Install and connect power	Hr	\$ 22	N/A	160	\$ 3,514	
	Site Labor - Plumbing and gauges	Hr	\$ 22	N/A	80	\$ 1,757	
	Site Labor - Pollution control equipment installation	Hr	\$ 22	N/A	80	\$ 1,757	
	Subtotal 6E						
	6F	SYSTEM MAINTENANCE/LABOR FOR 18 MONTHS					
		\$ 48,587					
Blowers		Each	\$ 423	N/A	18	\$ 7,620	
Filters		Each	\$ 305	N/A	18	\$ 5,490	
Piping		LF	\$ 61	N/A	18	\$ 1,098	
Vapor phase GAC		Each	\$ 6,710	N/A	2	\$ 13,420	
6G	LICENSE/PERMIT SAMPLING REQUIREMENTS						
	\$ 27,628						
6G	Sample Analysis	Each	\$ 610	N/A	18	\$ 10,980	
	Subtotal 6G						
6H	ELECTRICAL						
	\$ 10,980						
6H	Power requirements	LS	\$ 732	N/A	18	\$ 13,176	
	Subtotal 6H						
6I	COMPANY LABOR SUPPORT FOR O&M PERIOD						
	\$ 13,176						
	Project management	Hr	\$ 49	N/A	450	\$ 21,960	
	Equipment maintenance	Hr	\$ 22	N/A	360	\$ 7,906	
	Sampling	Hr	\$ 43	N/A	144	\$ 6,149	
	Inspection	Hr	\$ 22	N/A	72	\$ 1,581	
	GAC change out	Hr	\$ 22	N/A	288	\$ 6,324	
6I	Subtotal 6I						
	\$ 43,920						
Total Cost for CA - note this is an estimate only - actual costs will not be determined until a CA is selected						\$ 209,080	

Total Cost for CA - note this is an estimate only - actual costs will not be determined until a CA is selected



ITEM NO.	ITEM	UNIT	UNIT COST	UNIT COST REF	QUANTITY	Adjusted Cost Total
<b>ATCH STABILIZATION TANKS</b>						
<b>RCCA WASTE INVENTORY REMOVAL</b>						
1	Stabilization/Disposal of Solid Waste	Ton	\$ 50.00		48	213 \$ 10,650
	Transport of Solid Waste (Total Miles)	Load	\$ 2,400.00		33	32 \$ 76,800
	Subtotal 1					\$ 87,450
<b>MIXING VESSELS (1)</b>						
	Cut and Diamond	LF	\$ 2.42		23	3,966 \$ 9,596
	Load and Haul to Cell	CY	\$ 20.17		4.5	12 \$ 242
	Dispose of Rheate	Gal	\$ 0.96		28	5,760 \$ 5,547
	Transportation of Rheate	Load	\$ 1,800.00		32	2 \$ 3,600
	Labor & Equipment Rental	Hr	\$ 70.79		27	24 \$ 1,699
	Subtotal 2					\$ 18,985
<b>CONCRETE SPLASH PAD</b>						
3	Demolish	SF	\$ 7.29		6	9,102 \$ 66,351
	Dispose on site	CY	\$ 9.10		10	168.60 \$ 1,534
	Subtotal 3					\$ 67,885
<b>SYNTHETIC LINERS</b>						
	Labor - Inspect HDPE Liner	Hr	\$ 110.00		40D	3,00 \$ 330
4	Hand excavation to prepare liner for inspection	CY	\$ 97.20		14	478.50 \$ 46,508
	Load and Haul to cell	CY	\$ 45.82		3.5	4.05 \$ 186
	Subtotal 4					\$ 47,024
<b>FOUNDATION SOILS</b>						
	Haul to cell (Excavation Included in 4 above)	CY	\$ 4.58		19	478.50 \$ 2,192
5	Analytical (Foundation Soils, Metals)	Each	\$ 85.00		45	6 \$ 510
	Analytical (Foundation Soils, TOC)	Each	\$ 45.00		46	6 \$ 270
	Subtotal 5					\$ 2,972
<b>11 Batch Stabilization Tank</b>						\$ 224,316



ITEM NO.	ITEM	UNIT	UNIT COST	UNIT COST REF	QUANTITY	COST TOTAL
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**- DECONTAMINATION - CONTRACTOR'S LARGE EQUIPMENT**

**DECONTAMINATION - PRESSURE WASHING**

Labor & Equipment Rental	Hr	\$	70.79		27	21.5	\$	1,522
Rinse	Gal	\$	0.96		28	5,160	\$	4,969
Transport of rinse (combine one load w/ bldg)	Load	\$	1,800		32		\$	1,800
Total Equipment Decontamination							\$	8,291

**- PERSONAL PROTECTIVE EQUIPMENT**

Respirator	Each	\$	214.00		53	30	\$	6,420
Respirators, cartridges, organic vapor	Pkg.	\$	10.30		54	5	\$	52
Respirators, cartridges, dusts, fumes, mists	Pkg.	\$	12.70		55	5	\$	64
Tyvek coveralls	Each	\$	8.40		58	100	\$	840
Shoe covers	Box	\$	25.60		56	3	\$	77
Disposable Gloves	Box	\$	15.30		57	3	\$	46
Total Personal Protective Equipment							\$	7,498

**- GROUNDWATER MONITORING**

Labor	Hr	\$	65.00		40B	64	\$	4,160
Analysis including shipping	Each	\$	1,000		35A	60	\$	60,000
Total Groundwater Monitoring							\$	64,160

**- CLOSURE CERTIFICATION**

Consultant - Principle Engineer	Hr	\$	155.00		40A	40	\$	6,200
Consultant - Senior Engineer	Hr	\$	115.00		40C	50	\$	5,750
Consultant - Clerical/Wordprocessing	Hr	\$	55.00		40G	40	\$	2,200
Consultant - Other Direct Costs (Travel, reproduction, etc.)	Lump Sum	\$	2,000			1	\$	2,000
Total Closure Certification							\$	16,150



ITEM NO.	ITEM	UNIT	UNIT COST	UNIT COST REF	QUANTITY	COST TOTAL
<b>- Low Temperature Thermal Desorption Unit</b>						
<b>WASTE INVENTORY</b>						
1	Stabilization/Disposal of solid waste offsite	Tons	\$ 50.00	48	52	\$ 2,600
	Transportation	Load	\$ 2,400.00	33	3	\$ 7,200
	Subtotal 1					\$ 9,800
<b>PAD - SOIL/CEMENT, DECONTAMINATION OF STRUCTURES</b>						
	Excavation of Containment Tank Structure (2,025 square feet, 8" thick base, plus 4 x 45' long x 2' high x 5" thick walls (360 square feet))	CY	\$ 15.51	15A	56	\$ 869
	Excavation of cement pad (7,150 sq. ft. 6 - 8" depth, 6"-8" thick, average 7" thickness)	CY	\$ 15.51	15A	160	\$ 2,482
	Dispose on site (LTTD pad and containment tank)	CY	\$ 9.10	10	216	\$ 1,965
2	Excavation of steel/soil pad (5,760 sq. ft. 18" soil above, 6" soil below, 24" total)	CY	\$ 15.51	15A	430	\$ 6,669
	Dispose on site	CY	\$ 9.10	10	430	\$ 3,913
	Dispose of Rinsate (LTTD units, concrete pad, etc.)	Gal	\$ 0.96	28	4,000	\$ 3,852
	Transportation	Load	\$ 1,800.00	32	1	\$ 1,800
	Labor & Equipment Rental	BF	\$ 0.87	2	2,385	\$ 2,072
	Subtotal 2					\$ 23,621
<b>FOUNDATION SOILS</b>						
	Excavate foundation soil and load (14,935 sq. ft. 3" depth)	CY	\$ 15.51	15A	140	\$ 2,171
	Haul to soil	CY	\$ 4.58	19	140	\$ 641
3	Analytical (Foundation soil, metals)	Each	\$ 85.00	45	6	\$ 510
	Analytical (Foundation soil, TOC)	Each	\$ 45.00	46	6	\$ 270
	Subtotal 3					\$ 3,593
	<b>Total - Low Temperature Thermal Desorption Unit</b>					\$ 37,014



ITEM NO.	ITEM	UNIT	UNIT COST	UNIT COST REF	QUANTITY	COST TOTAL
<b>- Dry Hazardous Waste Storage Area</b>						
<b>WASTE INVENTORY</b>						
1	Stabilization/Disposal of solid waste offsite	Ton	\$ 50.00		48	\$ 2,400.00
	Transportation	Load	\$ 2,400.00		33	\$ 79,200.00
	Subtotal 1					\$ 81,600.00
<b>PAD - SOIL/CEMENT, DECONTAMINATION OF STRUCTURES</b>						
2	Excavation of soil/cement pad (75,502 sq. ft. 8"-18" thick, average 12" thickness)	CY	\$ 15.51	15A	2,796	\$ 43,372.00
	Dispose on site	CY	\$ 9.10	10	2,796	\$ 25,445.00
	Dispose of Runoff from structures (e.g. dock, lights, etc)	Gal	\$ 0.96	28	18,415	\$ 17,734.00
	Transportation	Load	\$ 1,800.00	32	4	\$ 7,200.00
	Labor & Equipment Rental	Hr	\$ 70.79	27	4	\$ 283.00
	Subtotal 2					\$ 94,033.00
<b>FOUNDATION SOILS</b>						
3	Excavate foundation soil and load (75,502 sq. ft. 3" depth)	CY	\$ 15.51	15A	699	\$ 10,843.00
	Haul to cell	CY	\$ 2.48	19	699	\$ 1,734.00
	Analytical (Foundation soil, metals)	Each	\$ 85.00	45	16	\$ 1,360.00
	Subtotal 3					\$13,937.00
<b>Total - Dry Hazardous Waste Storage Area</b>						<b>\$1,049,970.00</b>



ITEM NO.	ITEM	UNIT	UNIT COST	UNIT COST REF	QUANTITY	COST TOTAL
<b>1 - Container Management Building</b>						
<b>WASTE INVENTORY DISPOSAL COST</b>						
1	Liquid Waste (3251 Drum @ 458.7 lbs each)	Lb	\$ 0.26	29	1,491,234	\$387,721
	Transport Liquid Waste Offsite	Load	\$ 5,705.05	31	36	\$205,382
	Solid Waste (3250 drums) - Dispose in Cell	CY	\$ -	n/a	885	\$0
	Labor - Hand load liquid waste	CY	\$ 44.98	3	885	\$39,806
	Load and haul solids drums to cell	CY	\$ 20.17	4,5	885	\$17,853
	<b>Subtotal 1</b>					<b>\$650,762</b>
<b>BUILDING - SHELL</b>						
2	Demolish	Day	\$ 4,634.08	26	10.9	\$50,511
	Load and transport to cell	CY	\$ 20.17	4,5	66	\$1,330
	<b>Subtotal 2</b>					<b>\$51,842</b>
<b>BUILDING - SLAB</b>						
3	Demolish (slab 6" thick)	SR	\$ 7.29	6	25,343	\$184,743
	Dispose on site	CY	\$ 9.10	10	469	\$4,270
	Dispose of Rhinate	Lb	\$ 0.26	29	61,034.55	\$15,869
	Transportation	Load	\$ 5,705.05	31	6	\$34,230
	Labor & Equipment Rental	Hr	\$ 70.79	27	31	\$2,160
	<b>Subtotal 3</b>					<b>\$241,273</b>
<b>BUILDING - FOUNDATION SOILS</b>						
4	Excavate top 3 layers of foundation soil & load	CY	\$ 15.51	15A	1,514	\$23,482
	Haul to cell	CY	\$ 4.58	19	1,514	\$6,935
	Analytical (Foundation Soil, metals)	Batch	\$ 83.00	45	22	\$1,853
	<b>Subtotal 4</b>					<b>\$32,270</b>
<b>BUILDING - SYNTHETIC LINERS</b>						
5	Labor - Inspect secondary liner	Hour	\$ 110.00	40D	10.90	\$1,199
	Hand excavation to prepare liner for inspection	CY	\$ 97.20	14	469	\$45,616
	Load and haul to cell	CY	\$ 45.82	3,5	15.26	\$699
	<b>Subtotal 5</b>					<b>\$47,514</b>
<b>Net Cost of Container Management Closure</b>						<b>\$1,023,661</b>

2008 Closure Cost-rev1



Unit Cost Book  
Beatty Facility Closure Estimate and Post Closure Estimate

Ref. No.	Line Number	Page	Unit	Cost per Unit	Cost Index	Unit Price	Description	Crew
1	02 21 13.13 0800	22	L.F.	1.86	1.034	1.71	property line, perimeter, cleared land	A-7
2	04 01 30.20 2020	77	S.F.	0.84	1.034	0.87	steam cleaning, average	B-9
3	02 41 18.23 3040	36	C.Y.	43.80	1.034	44.98	hand loading truck, 60 foot haul	B-16
4	02 41 18.23 3080	36	C.Y.	18.70	1.034	18.34	machines loading truck	B-17
5	02 41 18.23 8000	36	C.Y.	0.81	1.034	0.84	haul, per mile up to 8 C.Y. truck	B-34B
6	02 41 16.17 0440	34	S.F.	7.05	1.034	7.28	concrete floor removal, 6" slab on grade reinforced with steel rods	B-4C
7	02 41 16.17 1140	34	L.F.	23.00	1.034	23.78	concrete footing removal, 2' thick, 3' wide	B-5
8	02 41 16.17 2800	34	%	10	1.034	10.34	add to 02 41 16.17 1140 for average reinforcing	NA
9	02 41 16.17 2820	34	%	20	1.034	20.68	add to 02 41 16.17 1140 for heavy reinforcing	NA
10	02 41 16.17 4200	34	C.Y.	8.80	1.034	8.10	add for disposal, on site	B-11A
11	02 41 20.10 1280	38	Mile	3.78	1.034	3.88	hazardous waste transportation in 25 C.Y. truck, minimum	NA
11A	02 41 20.10 1270	38	Mile	6.80	1.034	6.82	hazardous waste transportation in 25 C.Y. truck, maximum	NA
12	31 23 23.14 4420	223	L.C.Y.	2.81	1.034	2.80	backfill, structural, common earth, 200 H.P., 300' haul	B-10B
13	31 23 16.80 0400	220	B.C.Y.	4.98	1.034	5.15	excavation, bulk, scrap, common earth, 5,000' haul	B-33F
14	31 23 16.16 0700	215	B.C.Y.	84.00	1.034	97.20	hand excavation, structural, 12' to 18' deep	B-12B
15	31 23 16.16 8090	215	B.C.Y.	11.16	1.034	11.83	machines excavation, 1.5 C.Y. bucket, structural, small foundation, sand and gravel	NA
16	31 23 16.16 8024	216	%	16.00	1.034	16.81	add to 31 23 16.16 8090 for loading onto trucks	NA
17	31 23 23.23 8060	232	E.C.Y.	0.23	1.034	0.24	compaction, tamping, vibrating roller, 12" lift, 2 passes	B-10Y
18	31 23 23.23 8020	232	E.C.Y.	0.52	1.034	0.54	compaction, tamping, vibrating roller, 6" lift, 3 passes	B-10Y
18	Category Not Used							
19	31 23 23.18 0330	226	L.C.Y.	4.43	1.034	4.58	haul, 1 mile roundtrip, 2.7 load/hr.	B-34B
19B	31 23 23.18 1280	226	L.C.Y.	8.20	1.034	9.81	20 CY haul, 10 mile roundtrip, 0.75 load/hr.	B-34D
18C	31 23 23.18 2020	226	L.C.Y.	2.83	1.034	2.72	22 CY haul, 1/2 mile roundtrip, 4.2 load/hr.	B-34F
19D	31 23 23.17 0020	226	L.C.Y.	1.85	1.034	1.91	spread dump material, no compaction, by dozer	B-10B
20	33 61 13.10 1640	319	L.F.	71	1.034	73.41	polyethylene pipe, 60 PSI, 40' joints, 6" diameter, SDR 11	B-21A
21	33 61 13.10 3000		L.F.	88.78	1.034	91.77	estimated value, polyethylene pipe, 60 PSI, 40' joints, 10" diameter, SDR 11	NA
22	32 31 13.20 0820	289	L.F.	48.50	1.034	48.08	fence, chain-link, 6" industrial, 6 ga. wire, galvanized steel	B-80C
23	06 06 21.10 0100	84	L.F.	2.34	1.034	2.42	steel cutting, hand burning with torch, up to 1/2" thick	E-25
24	33 21 13.10 3100	306	Each	9.125	1.034	9.435.25	pump, 6" submersible, 25' to 500' deep, 30 HP, 100 to 300 GPM	Q-22
25	31 22.16 10 0012	209	DAY	1448.04	1.034	1484.17136	site grading crew and equipment daily rate	B-11L
26	02 41 16.13 0600	33	DAY	4481.70	1.034	4634.0776	building demo crew and labor and equipment daily rate	B-3
27	Crew B-9B	462	Hr	66.46	1.034	70.76764	steam cleaning labor including equipment rental	B-9B



Unit Cost Break  
Beatty Facility Closure Estimate and Post Closure Estimate

Ref. No.	Line Number	Page	Unit	Cost per Unit	Cost Index	Unit Price	Description	Crew
28	Site expense: Siemens Water Treatm		Unit					
29	Site expense: Veeva (281) 426-7166		LB	0.26	1.0	0.26	disposal of leachate in Los Angeles, CA	
30	Category Not Used						disposal of PCB liquids in Port Arthur, TX	
31	Site expense: Tired (801) 936-6383		Load	6705.05	1.0	6705.05	transport of liquid PCBs to Veeva in Port Arthur - max 5,000 gal. load; Tired Trucking	
32	Site expense: Tired (801) 936-6383		Load	1800	1.0	1800	transport of leachate to Siemens in Los Angeles - max 5,000 gal. load; Tired Trucking	
33	Site expense: Tired (801) 936-6383		Load	2,400	1.0	2400	transport of DWASA waste to USE Grandview, ID	
34	Category Not Used							
35	Category Not Used							
35A	Site expense: AnalySys 612-385-6565		Each	1000	1.0	1000	groundwater analysis - groundwater for constituents in Tables 10.4, 10.5, and 10.6 including shipping	
35B	Site expense: AnalySys 612-385-6565		Each	1000	1.0	1000	groundwater analysis - groundwater for constituents in Table 10.7 including shipping	
36	Test America (303) 736-0100		Each	240	1.0	240	groundwater analysis (VOCs and PCBs)	
37	Category Not Used							
38	Category Not Used							

Note: All of the above costs include labor, equipment and miscellaneous items unless otherwise noted. All Means costs utilized include overhead and profit.



Unit Cost Basis  
Beatty Facility Closure Estimate and Post Closure Estimate

Ref. No.	Line Number	Page	Unit	Cost per Unit	Cost Index	Unit Price	Description	Crew
39	Vector Engineering							
40A	Aqua-Ter Inc.		Per Hour	NA	1.0	NA	Technical changes - Use Reference 40E for gpr sampling Use Reference 40D for liner inspection	
40B	Aqua-Ter Inc.		Per Hour	155	1.0	155	Technical Director - 2008 Schedule of Rates	
40C	Aqua-Ter Inc.		Per Hour	125	1.0	125	Project Director - 2008 Schedule of Rates	
40D	Aqua-Ter Inc.		Per Hour	116	1.0	116	Senior Engineer/Scientist - 2008 Schedule of Rates	
40E	Aqua-Ter Inc.		Per Hour	110	1.0	110	Project Engineer/Scientist - 2008 Schedule of Rates	
40F	Aqua-Ter Inc.		Per Hour	65	1.0	65	Engineer/Scientist - 2008 Schedule of Rates	
40G	Aqua-Ter Inc.		Per Hour	70	1.0	70	Draftsman/Technician - 2008 Schedule of Rates	
43A	Las Vegas Paving Corp.		S.F.	0.87	1.0	0.87	Certified/Admin Support - 2008 Schedule of Rates	
43B	Las Vegas Paving Corp.		S.F.	0.81	1.0	0.81	GC1 on slope	
43C	Las Vegas Paving Corp.		S.F.	0.88	1.0	0.88	60-Mil HDPE Liner on slope	
43D	Las Vegas Paving Corp.		S.F.	1.01	1.0	1.01	LDS - Double-rolled geocomposite on slope	
43E	Las Vegas Paving Corp.		S.F.	0.46	1.0	0.46	80-mil HDPE Liner on slope	
43F	Las Vegas Paving Corp.		S.F.	0.34	1.0	0.34	LCR6 - Geonet on slope	
43G	Las Vegas Paving Corp.		S.F.	0.48	1.0	0.48	Non-woven geotextile on slope	
43H	Las Vegas Paving Corp.		S.F.	2.40	1.0	2.40	Sacrificial 30-mil geomembrane on slope	
43I	Las Vegas Paving Corp.		C.Y.	12.00	1.0	12.00	Escavation/backfill surface soil	
46	Test America (303) 736-0100		Each	85	1.0	85.00	Liner trench backfill	
47	Test America (303) 736-0100		Each	45	1.0	45.00	laboratory analysis for 6 RCRA metals in soil	
48	UBEN Granview, Idaho		Each	90	1.0	90.00	laboratory analysis for TOC in soil	
49	Hertz Rental Car		Each	80	1.0	80.00	laboratory analysis for PCBs in soil	
50	Continental Airlines		Day	67.99	1.0	67.99	stabilization and disposal, Granview, ID	
51	Model 8		Round Trip	482.00	1.0	482.00	mid-size rental car from McCamden Airport	
52	Per Diem		Per Day	62.89	1.0	62.89	lodging, Beatty, NV	
53	Lab Safety Supply		Each	40.00	1.0	40.00	cost allowance for meals	
54	Lab Safety Supply		Each	214.00	1.0	214	north hill face respirator, 7500 series	
55	Lab Safety Supply		Pkg.	10.30	1.0	10.3	respirator cartridge, organic vapor, 75B-41584	
56	Lab Safety Supply		Pkg.	12.70	1.0	12.7	respirator cartridge, dust, fumes, mist, 75B-44302 and 75B-44303	
57	Lab Safety Supply		Box	26.50	1.0	26.5	elbow covers, box of 60, Tyvek	
58	Lab Safety Supply		Box	16.3	1.0	16.3	disposable nitrile n-dex gloves, box of 100	
59	Las Vegas Paving Corp.		Each	8.4	1.0	8.4	tyvek coversalls	
60	Las Vegas Paving Corp.		CY		1.0	0	backfill including excavation, hauling, placement, light compaction	
61	Las Vegas Paving Corp.		CY	2.4	1.0	2.4	backfill including excavation, hauling, placement, moderate compaction	
			CY		1.0		backfill including excavation, hauling, placement, no compaction	



Unit Cost Basis  
Beauty Facility Closure Estimate and Pool Closure Estimate

Ref. No.	Line Number	Page	Unit	Cost per Unit	Cost Index	Unit Price	Description	Cover
62	USEN							
63	DEH Mining		CY	7.22	1.0	7.22	water supply for compaction	
64	Category Not Used						Fill material delivered to USEN from local source.	
66	Aquafix, Inc.		MSF	25	1.0	25	Based on use of 3 ft monolithic cover as specified in the supplement to the Landfill Report, 1996.	
68	Aquafix, Inc.		MSF	65	1.0	65	Design specifications for Alternative Cover - Trenches 11 and 12.	
69	32 18, 14 5500	263	MSF	.46, 6	1.034	61.18	QA/QC with Compaction Testing	
67	31 22 16, 10 3312	209	MSF	22.50	1.034	23.27	Hydroseeding with mulch and fertilizer (with/over mts)	
68	Lynne Christensen		LF	160	1.0	160	staking final cover, assumed similar effort as fine grading on steep slopes with large quantities	

COST REFERENCE  
MEANS HEAVY CONSTRUCTION COST DATA, 22ND ANNUAL EDITION, 2008